



## Biorenewable Insights: Sustainable Natural Rubber

Sustainable Natural Rubber is one in a series of reports published as part of NexantECA's 2021 Biorenewable Insights program.

### Overview

Natural rubber, though a biobased and renewable product and one of the most important polymers in the development of the human civilizations, it is not always produced sustainably. Natural rubber is vitally important as it is used in the creation of thousands of products including tires for aircrafts and cars, medical devices, surgical gloves, clothes, toys and many others.

The natural rubber industry faces biodiversity and critical supply issues. This has provided a drive for rubber produced from renewable resources. Increasing stringent requirements and consumer demands for the sustainability and environmental friendliness of many industries seen recently have also added the push for more sustainable rubber production. New renewable and commercially viable rubber technologies could help alleviate issues in the rubber markets. The two plants that have been the focus of the most attention and have begun to see some limited usage as an alternative source of natural rubber are:

- Guayule (*Parthenium argentatum*)
- Russian dandelion (*Taraxacum kok-saghyz*-TKS)

This report aims to answer the following strategic questions:

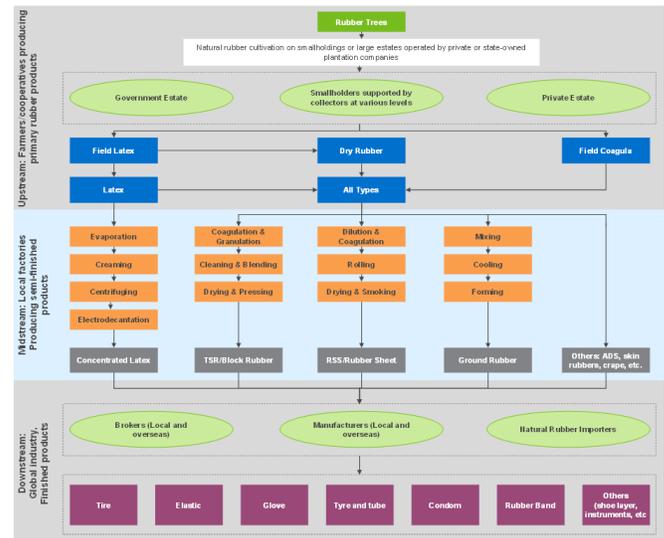
- What are the major concerns with Natural Rubber Industry? What are the efforts for Sustainable Natural Rubber Industry?
- Who are the key technology developers/holders for extracting rubber from guayule, TKS and biobased? What are some of the developing or alternative technologies?
- Are these existing and developing natural rubber technologies competitive in terms of costs relative to natural rubber extracted from Hevea tree?
- What is the current global capacity, and which announced projects are likely to materialize?
- Which region is the most competitive?

### Technologies

This report covers existing and under development technology/processes for extracting natural rubber from *Hevea*, guayule, and TKS:

- *Hevea Brasiliensis* Rubber Processing
- Guayule Rubber Extraction Processes
- TKS Rubber Extraction Process

It also gives a broad overview of the complex global natural rubber processing value chain, as summarized in the graphic below:



### Process Economics

Estimates of overall competitiveness for producing natural rubber from Hevea tree are presented for four locations (Africa, China, SEA, and Brazil). Regional pricing is set on a first quarter of 2021 basis.

### Capacity Analysis

This report covers existing global Hevea natural rubber plantation capacity and highlights the expected shift in natural rubber production centers as result of competing crops and increased plantations. The report provides a view on the global supply, demand and trade of natural rubber. A summary of announced projects for guayule and TKS is also provided.



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